

Name: _____

Date: _____

MEASURING TIME

It is now possible to buy a watch or clock that synchronizes itself with the United States Naval Observatory. More than fifty clocks at the Naval Observatory measure the frequency emitted by atoms of the metallic element cesium. These atomic clocks are accurate to within one second every 1,400,000 years. In fact, our ability to measure time is more accurate than the stability of the earth. Scientists from the International Earth Rotation and Reference Systems Service add a “leap second” to the clock in many years because ocean tides are causing the earth to turn slightly slower.

Humankind first measured the time of the day with sundials, but sundials were usable only on sunny days. In ancient Rome, lawyers would be scheduled to speak in the Forum ante meridiem—before the sun reaches its highest point, or post meridiem—after the sun reaches its highest point.

Today the abbreviations a.m. and p.m. reflect this practice.

The first mechanical clocks in Europe had no numbers. Most people could not read, and technology to create a clock face was not initially in place. Clocks would count out the hour by ringing a large bell high in a tower. The term o’clock is a contraction for “of the clock.”

The Romans borrowed the seven-day week from the Hebrews. The week is associated with the Old Testament, where God created the world in six days and rested on the seventh. The Romans once had an eight-day week, but shortened their week when they adopted Christianity.

Our months correspond with the phases of the moon. A full moon occurs every 27 days, but in time we have adjusted the calendar in order make twelve months equal to the solar year.

Fill in the Blanks

We now have the ability to measure t_____ to within one s_____ every 1.4 *m_____ years, but *c_____ have not always been that *a_____. Humankind first measured the hour of the day with s_____, but a sundial was impractical at n_____ or on *c_o_dy days. Europe’s first m_c_a_i_al clocks used b_____ in place of a d_____ because most people could not r_____.

Our seven-day w_____ came from the R_____, who borrowed it from the H_____. Our twelve m_____ correspond with the p_____ of the m_____, but we have added days to the months so that a cycle of twelve months is equal to a solar year.

Answer in complete sentences

*1. Give an example from modern society that demonstrates how we rely on knowing the exact time.

2. What do a.m. and p.m. mean? What do the terms translate to in English?
